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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,065	06/15/2006	Shahram Mihan	LU 6155 (US)	5987
34872	7590	01/17/2008	EXAMINER	
Basell USA Inc. Delaware Corporate Center II 2 Righter Parkway, Suite #300 Wilmington, DE 19803			LEE, RIP A	
			ART UNIT	PAPER NUMBER
			1796	
			MAIL DATE	DELIVERY MODE
			01/17/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,065	Applicant(s) MIHAN, SHAHRAM	
	Examiner Rip A. Lee	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☒ Claim(s) 3, 7 and 8 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>09-21-2006</u> . | 6) <input type="checkbox"/> Other: ____ |

Art Unit: 1796

DETAILED ACTION

Claim Objections

1. Claim 3 is objected to because of the following informalities: The formula appears to be deficient because A is defined as a group 15 element, rather than a molecular fragment containing the group 15 element. A group 15 element covalently bound to two R₂ groups and one H would not bear a positive formal charge. Appropriate correction is required.
2. Claims 7 and 8 are objected to because of the following informalities: The description of catalyst components ("catalyst system comprising...") appears incomplete since the process by which the catalyst is prepared contains an organometallic compound. Appropriate correction is required.
3. Claims 7 and 8 are objected to because of the following informalities: The "reaction product" needs to be defined clearly in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 1796

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-3 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Lipian *et al.* (U.S. 6,455,650).

Lipian *et al.* teaches a catalyst comprising a transition metal compound and a fluorinated tetraalkoxyaluminate, $\text{Li}[\text{Al}(\text{OC}(\text{CF}_3)_3)_4]$; examples 45 and 46. The catalyst is used for polymerization of olefin. Lipian *et al.* also teaches conventional ammonium and phosphonium counterions, such as ammonium, $[\text{NHR}^{41}_3]$, $[\text{NR}^{41}_4]$, $[\text{PHR}^{41}_3]$, and $[\text{PR}^{41}_4]$, for weakly coordinating anions of the invention (col. 26, line 6).

Art Unit: 1796

8. Claims 1-5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Epstein *et al.* (U.S. 5,895,771) in view of Ivanova *et al.* (*Chem. Eur. J.*, 2001).

Epstein *et al.* discloses metallocene-based, olefin polymerization catalysts comprising metallocene, organoaluminum, and a fluorinated aluminate as the co-catalyst component. Aluminate anions have the formula $[\text{Al}(\text{OC}(\text{Ph})(\text{CF}_3)_2)_4]$ and $[\text{Al}(\text{OC}(\text{Me})(\text{CF}_3)_2)_4]$. The reference does not disclose use of other fluorinated derivatives. Ivanova *et al.* discloses the "superweak" anion, $\text{Li}[\text{Al}(\text{OC}(\text{CF}_3)_3)_4]$, that has poor Lewis base character. Synthesis of the corresponding $[\text{Bu}_4\text{N}][\text{Al}(\text{OC}(\text{CF}_3)_3)_4]$ by ion exchange is facile (page 504). As seen in Figure 1, the polyfluoroalcohol derived from $[\text{Al}(\text{OC}(\text{CF}_3)_3)_4]$ is considerably less basic than those alcohols derived from the anions disclosed in Epstein *et al.*, and one skilled in the art readily attributes this to the presence of three electrophilic CF_3 groups. One of ordinary skill in the catalyst art would also recognize the utility of the highly electrophilic non-coordinating aluminate anion of Ivanova *et al.* as a useful co-catalyst for the polymerization catalysts of Epstein *et al.* Therefore, it would have been obvious to one having ordinary skill in the art to modify the catalyst of Epstein *et al.* using $[\text{Bu}_4\text{N}][\text{Al}(\text{OC}(\text{CF}_3)_3)_4]$, as disclosed in Ivanova *et al.*, and one having ordinary skill in the art would have reasonably expected such a modification to produce a highly active polymerization catalyst.

9. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Epstein *et al.* in view of Ivanova *et al.* and further in view of Göres *et al.* (WO 99/50312; equivalent U.S. 6,583,238 relied upon for translation).

Epstein *et al.* does not disclose supported catalysts, however, at the time the invention was made, use of supported catalysts was well-known and common practice in the art. Göres *et al.* discloses use of supported catalysts which are especially suited for bulk and gas phase polymerization processes. When silica is the support, the inert support is calcined and treated with passivating agents such as organosilicon, organoboron, and organoaluminum reagents, followed by loading of the metallocene and activator component (col. 9, line 21 – col. 13, line 64). One having ordinary skill in the art would have found it obvious to carry out the routine process of preparing supported catalysts, as shown in Göres *et al.*, in order to make a supported

Art Unit: 1796

catalyst of Epstein *et al.*, modified with the co-activator of Ivanova *et al.*, and one having ordinary skill in the art would have reasonably expected the supported catalyst to work exceptionally well in bulk and gas phase polymerizations.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu S. Jagannathan, can be reached at (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).



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January 15, 2008